Alternate Management System Review Checklist – Supplemental Comments Sheet

Guideline (G8) Specification (G8 section noted in brackets)	Comments (Applicant – black; USCG – red)
1.1. BWMS description, including diagrammatic drawing(s) showing typical pumping and piping arrangements (including a Bill of Materials and the specifications and standard(s) which it meets), sampling facilities for control and monitoring systems, operational outlets for treated water and waste streams [5.1] AND 1.11. BWMS is robust and suitable for working in the shipboard environment, with design, construction and materials, including electronic and electrical components, including a Bill of Materials and the specifications and standard(s) which it meet(s), adequate for intended service. [4.7.3]	Part 1. Technical Description and Part 3. Drawings and CFD contains descriptions, drawings and diagrams for the Cathelco BWMS. Some of the information required by the AMS Checklist items 1.1 and 1.11 is not presently available, nor was it submitted in support of Cathelco's Type Approval application to BSH. Specifically, we understand that the Bills of Materials for the Cathelco BWMS lacks specificity and information regarding specific standards to which the components, sub-components, electrical equipment, piping assemblages and enclosures comply (e.g., Class Rules, 46 CFR Subchapters F and/or J, ASTM, IEEE or similar accepted standards). Cathelco acknowledges these data and information gaps and is working on developing solutions to these gaps for their U.S. Type Approval application package. However, in the meantime, we respectfully request that the Coast Guard accept this acknowledgement of these gaps and continue the AMS Review Process so that the Cathelco AMS can receive Acceptance as an Alternate Management System as soon as possible.
1.1.4 Control equipment stores data on monitored functions and conditions for at least 24 months; stored data can be displayed or printed for inspection. [4.13]	The Cathelco BWMS system is fitted with an 8GB datalogger. A ballast operation of 1hr 30 minutes generates 33KB of data or 22 KB per hour. There are 17,520 hours in two years (24 hours/day x 365 days/year x 2 years). Thus, if the system were operated continuously for two years, the amount of data generated would be 385,440 KB of data which equates to 0.0459GB of generated data if the system was in constant operation for 2 years.

Enclosure (3)

Guideline (G8) Specification **(G8 section noted in brackets)**	**Comments** **(Applicant – black; USCG – red)**
1.2.2. Visual alarm is activated whenever the BWMS is in operation for purpose of cleaning, calibration, or repair; such events recorded by control equipment. [4.5.2]	<u>Cleaning</u> The CIP cleaning cycle automatically operates after any of the following operations: Ballast Operation De-Ballast operation System Refill Tank Stripping operation System control logic prevents lamps from being illuminated during CIP process. The CIP cleaning cycle can also be manually operated at any time, as long as the system is not running any other operation, by pressing the CIP Clean button from the overview screen. This should be carried out as per the maintenance instructions. <u>Repair</u> Repair / replacement of lamps and/or sleeves requires unplugging lamps from ends of UV chamber, causing alarm.
4.3.8 Documentation of system operations, including: 2) Possible reasons for unsuccessful test cycle or failure of a cycle to meet D-2 Standard.	Due to crew error, approximately 50 cubic meters of untreated water was pumped into tank 9, one of the two tanks used for treated water. This was done after the initial intake of treated water. A comparison of the laboratory log, the operators log and the ballast log of the bridge showed what happened. A malfunction of the system and direct contamination of the sample was ruled out. Nevertheless, four of the five shipboard tests were successful and valid, exceeding the required three.
4.4.1. Description of test set-up, including: 2) Piping and pumping arrangements [Annex Part 2, 2.3.9]	Initial fresh water source identified in NIOZ QAPP Section 3.2 was of poor quality and did not contain an adequate number of ambient organisms. Therefore, the fresh water source was changed to lake water in the location described in the test report to ensure adequate numbers of ambient fresh water organisms.